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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/677,110	10/01/2003	Gordon Y. Li	109822-94	4291

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EXAMINER	
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ART UNIT	PAPER NUMBER
2609	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/677,110	LI ET AL.
	Examiner	Art Unit
	Sari Sawaged	2609

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/1/2003*.
2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-10* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a)☐ All b)☐ Some * c)☐ None of:
1.☐ Certified copies of the priority documents have been received.
2.☐ Certified copies of the priority documents have been received in Application No. _____.
3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: *"Method 100"* is mentioned in the specification but is not marked in Figure 1.

2. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

> applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 6, 8, 9 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Vogel et al. (hereinafter referred to as Vogel) (U.S. 6,804,262).

5. Claim 1 states, "A cable modem channel scanning and acquisition method comprising: performing a fast scan of each channel in a list of candidate channels for supporting cable modem services; and, if a channel is not acquired during the fast scan, performing a slow scan of each channel in the list."

6. Regarding claim 1, Vogel teaches a cable modem channel scanning and acquisition method that entails performing a fast scan of potential channels by taking power measurements *(See Col. 16 lines 50-56)* and then performing a slow scan of the selected channels to identify/acquire a valid channel *(See Col. 15 lines 61-66).*

7. Claim 2 states, "A method as claimed in claim 1, wherein the fast scan step comprises considering a single operating parameter of the cable modem that might indicate the presence of a valid channel and, if this parameter does not indicate the presence of a valid channel, moving on to scan the next channel in the list."

8. Regarding claim 2, Vogel teaches using a single operating parameter of the cable modem that might indicate the presence of a valid channel and if this operating

parameter does not indicate the presence of a valid channel, moving on to scan the next channel *(See Col. 13 lines 23-28).*

9. Claim 6 states, "A method as claimed in claim 1, wherein the method first attempts to acquire channels on a golden list of channels that are likely to support cable modem services."

10. Regarding claim 6, Vogel teaches a method where the cable modem classifies channels as inactive, analog, or digital. Once the cable modem has found a valid downstream data channel that it can use, it stores the channel information in nonvolatile memory for later use. This is effectively a golden list of channels that are likely to support cable modem services plan *(See Column 14 Lines 1-11 and Column 15 Lines 52-55 and 65-67 and Column 16 Lines 11-16).*

11. Claim 8 states, "A method as claimed in claim 6, wherein the method does not attempt to acquire channels on a black list of channels that are not likely to support cable modem services."

12. Regarding Claim 8, Vogel teaches a method where the cable modem classifies channels as inactive, analog, digital. *(See Column 14 Lines 1-11 and Column 15 Lines 52-55 and 65-67 and Column 16 Lines 11-16)*. Once the cable modem has classified the channels, the cable modem does not attempt to acquire the inactive, the analog, or any other channels that are not likely to support cable modem services. This is effectively a black list.

13. *Claim 9 states, "A method as claimed in claim 8, wherein the method does not attempt to acquire channels outside the range of the applicable frequency plan."*

14. Regarding claim 9, Vogel discloses that when a channel plan determination has been made, the cable modem stores it in non-volatile memory and then proceeds to classify and acquire channels in this channel plan, effectively ignoring channels outside of the channel plan *(See Column 14 Lines 1-11 and Column 15 Lines 52-55 and 65-67 and Column 16 Lines 11-16)*.

15. *Claim 10 states, "A method as claimed in claim 9, and comprising an initial scanning and acquisition procedure performed prior to first registration of the modem wherein channels - on the black list and outside the range of the applicable frequency plan are scanned, but are not scanned thereafter."*

16. Regarding claim 10, Vogel discloses that if the cable modem was not able to make a channel plan determination (because the cable modem was used in countries that have different standards) the cable modem can scan the frequencies spanning the entire anticipated downstream bandwidth. The cable modem can classify all channels and store the information in non-volatile memory. Once all the channels have been classified there is no need to scan channels that are on the blacklist or the channels outside the frequency plan (if a plan was determined) *(See Column 14 Lines 1-11 and Column 15 Lines 52-55 and 65-67 and Column 16 Lines 11-16).*

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Vogel.

19. Claim 3 states, "A method as claimed in claim 2, wherein the single operating parameter is AGC lock state."

20. Regarding Claim 3, Vogel discloses, using a single operating parameter of the cable modem to indicate the presence of a valid channel and if this parameter does not indicate the presence of a valid channel, moving on to scan the next channel *(See Col. 13 lines 23-28).* Vogel goes on to say,

> "The approach of the present invention can be much more efficient than other approaches that are used for initializing a cable modem, because instead of demodulating a large number of channels, most of which are likely to be analog television channels rather than digital data channels, the cable modem simply takes power measurements to pinpoint the channels that are likely to carry useable digital data. Additionally, it is typically faster to take power measurements than to attempt QAM signals." *(See Col. 16 lines 48- 56)*

Vogel knew that taking power measurements was a quicker way of identifying and bypassing channels than by attempting to demodulate all channels. AGC circuits were inherent in many communications devices at the time the invention was made, cable modems included. Vogel's method encompasses the functionality of the AGC lock state by only fully analyzing channels that contain signals above a certain threshold, effectively bypassing inactive channels. Vogel also uses power measurements to differentiate between analog, digital, and inactive channels. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use AGC lock state method because it would have decreased the time it would have taken to scan through channels.

12. Claims 4, 5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vogel in view of Furuta (US 20020073433).

13. Claim 4 states, "A method as claimed in claim 1, wherein the first channel considered is the last known good channel, and wherein the method periodically returns to and attempts to acquire the last known good channel."

14. Regarding Claim 4, Vogel teaches a method of storing valid data channels in memory *(See Column 15 Lines 65-67)* but does not disclose "the last known good channel." However, within the same field of endeavor, Furuta discloses that when the cable modem finds a viable frequency, that the frequency is recorded in the frequency cache and if the power supply to the cable modem is disconnected for some reason, that this frequency is recognized from the frequency cache and the cable modem is quickly restored to communicate with the CMTS without performing the frequency

search again. This is effectively the last known good channel *(See Page 2 Paragraph 0029).* Furuta further discloses that if the downstream carrier is lost, the cable modem can search:

I. Only the channels recorded in the frequency cache.

II. A predetermined number of channels for the downstream frequency; search a predetermined part of the frequency cache, repeating these search by turns (periodically attempts to acquire the last known good channel).

III. Only the frequency bands recorded in the frequency cache in order to reduce the bandwidth of frequency band to be searched, namely skipping other bands. *(See Page 3 Paragraphs 0040-0043)*

By searching a predetermined number of channels and then repeating the search, the last known good channel is going to be periodically visited. The programmable channel hop depth is equivalent to the number of channels or frequencies that are predetermined in Furuta's method. It would have been obvious to one of ordinary skill to combine Vogel's method with Furuta's because the last known good channel is going to be the most likely channel for communication and by using this method the channel search time would be greatly decreased.

15. Claim 5 states, "A method as claimed in claim 4, wherein the frequency of attempts to acquire the last known good channel is determined by a programmable channel hop depth."

16. Regarding claim 5, as discussed in the rejection for claim 4, by searching a predetermined number of channels and then repeating the search, the last known good channel is going to be periodically visited. The programmable channel hop depth is equivalent to the number of channels or frequencies that are predetermined in Furuta's method.

17. *Claim 7 states, "A method as claimed in claim 6, wherein the golden list is adaptively updated by adding the previous last known good channel to the golden list whenever the last known good channel is updated."*

18. Regarding claim 7, Vogel discloses a method of storing a golden list in memory *(See Column 15 Lines 65-67).* Vogel does not specifically disclose "the last known good channel", but Furuta discloses storing the last known good channel in memory (frequency cache). Furuta also stores the downstream frequency for each channel in a table, which is also a golden list. Once a new "last known good channel" is selected it is added to the memory (frequency cache). It would have been obvious to one of ordinary skill in the art to combine Vogel's method of a golden list with Furuta's method of the last known good channel because by using a golden list and the last known good channel, the time required to search for and acquire a valid channel is effectively reduced.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sari Sawaged whose telephone number is (571) 270-5085. The examiner can normally be reached on Mon-Thurs, 9:00AM-5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doon Chow can be reached on (571) 272-7767. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DENNIS DOON CHOW
SUPERVISORY PATENT EXAMINER